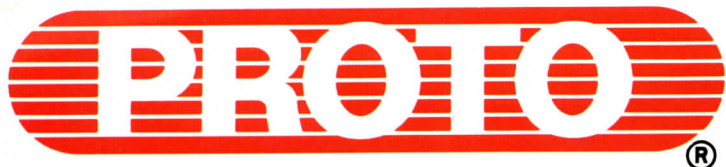


PROTO[®]
Electronic Tools



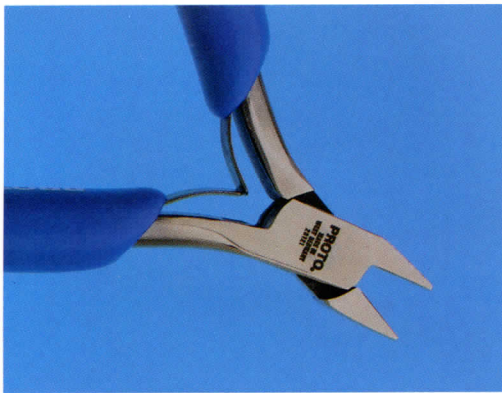
Electronic Tools

ALL PLIERS SHOWN BELOW ARE ACTUAL SIZE.



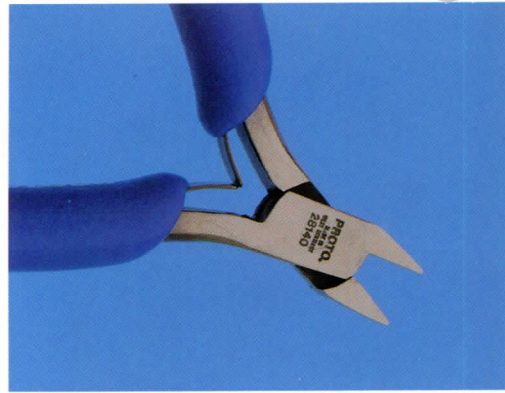
4 1/4" Oval Head Cutters

a = .400 b = .354 c = .236 d = 400, 16 AWG
copper wire capacity
Prod. No. 28100—Flush Cut
Prod. No. 28101—Semi Flush Cut



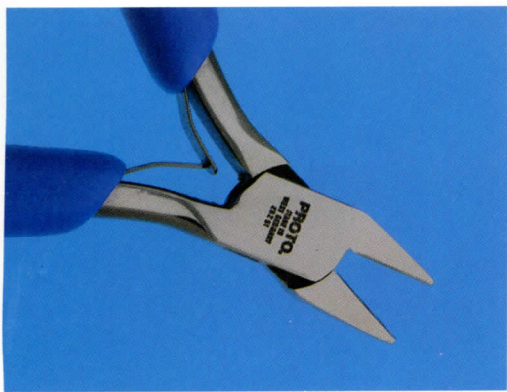
4 1/4" Tapered Head Cutters

a = .354 b = .354 c = .236 d = .354, 18 AWG
copper wire capacity
Prod. No. 28120—Flush Cut
Prod. No. 28121—Semi Flush Cut



4 1/4" Tapered Relieved Head Cutters

a = .354 b = .354 c = .236 d = .354, 20 AWG
copper wire capacity
Prod. No. 28140—Flush Cut
Prod. No. 28141—Semi Flush Cut



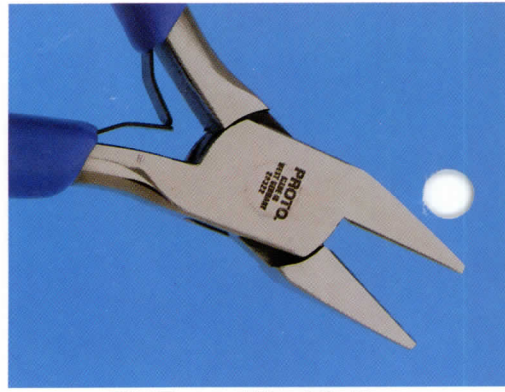
4 3/4" Tapered Relieved Head Cutters

a = .473 b = .433 c = .295 d = .473, 18 AWG
copper wire capacity
Prod. No. 28251—Semi Flush Cut



5 1/4" Oval Head Cutters

a = .788 b = .551 c = .354 d = .788, 12 AWG
copper wire capacity, 21 AWG hard wire
capacity
Prod. No. 28302—Standard Cut



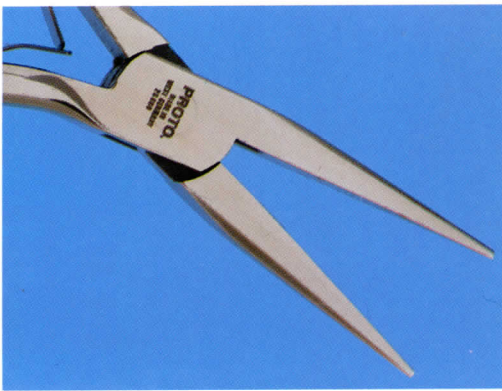
5 1/4" Tapered Head Cutters

a = .709 b = .590 c = .394 d = .709, 13 AWG
copper wire capacity, 24 AWG hard wire
capacity
Prod. No. 28322—Standard Cut



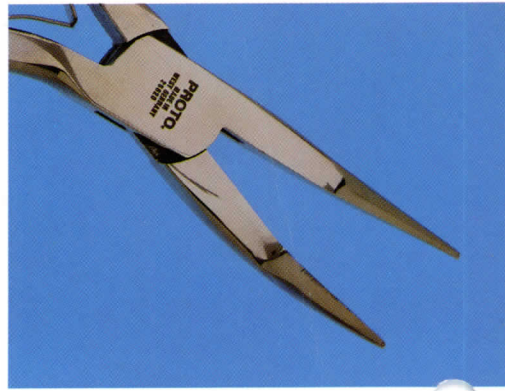
5 3/4" Needle Nose Pliers

b = .433 c = .295 d = 1.496
Prod. No. 28640—Smooth Jaws
Prod. No. 28641—Serrated Jaws



5 3/4" Chain Nose Pliers

b = .433 c = .295 d = 1.575
Prod. No. 28600—Smooth Jaws
Prod. No. 28601—Serrated Jaws

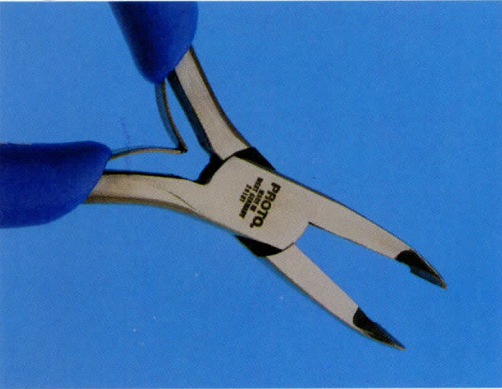


5 3/4" Bent Chain Nose Pliers

b = .433 c = .295 d = 1.130
Prod. No. 28620—Smooth Jaws
Prod. No. 28621—Serrated Jaws

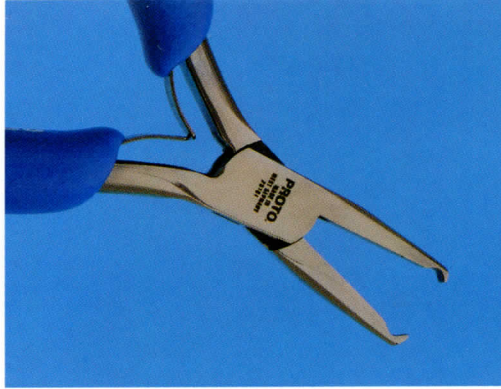


WARNING: PROTECT YOUR EYES—WEAR SAFETY GOGGLES



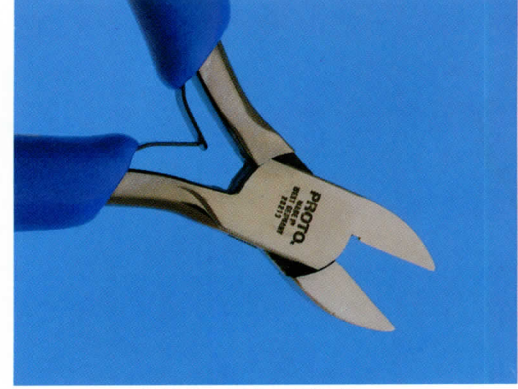
4 3/4" Angled Tip Cutters

a = .197 b = .394 c = .236 d = .788 20 AWG
copper wire capacity
Prod. No. 28181—Semi Flush Cut



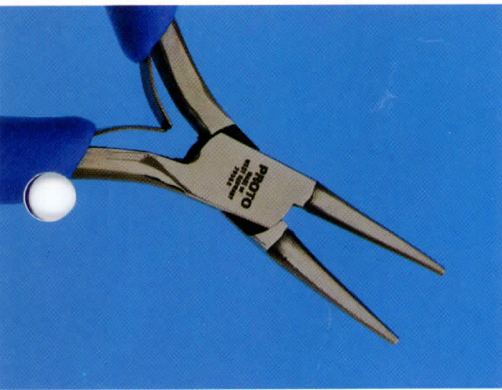
4 1/2" End Cutters

a = .098 b = .394 c = .217 d = .670 20 AWG
copper wire capacity
Prod. No. 28161—Semi Flush Cut



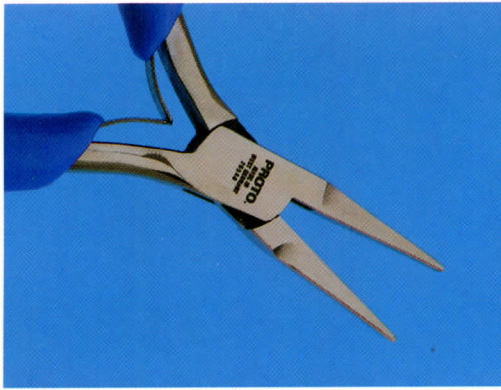
4 3/4" Oval Head Cutters

a = .512 b = .433 c = .295 d = .512, 15 AWG
copper wire capacity, 26 AWG hard wire
capacity
Prod. No. 28210—Flush Cut
Prod. No. 28211—Semi Flush Cut
Prod. No. 28212—Standard Cut



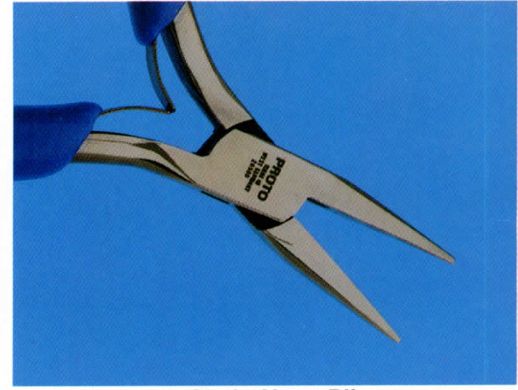
4 3/4" Round Nose Pliers

b = .394 c = .236 d = .788
Prod. No. 28560—Smooth Jaws



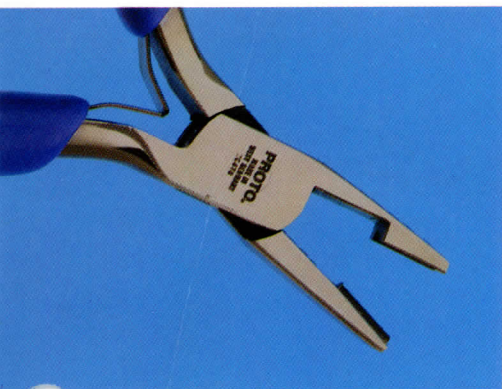
4 3/4" Flat Nose Pliers

b = .354 c = .236 d = .866
Prod. No. 28580—Smooth Jaws



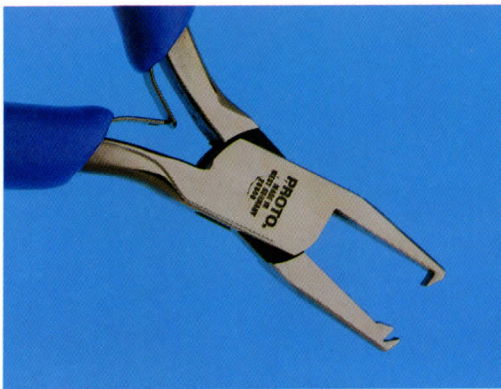
4 3/4" Chain Nose Pliers

b = .354 c = .236 d = .866
Prod. No. 28500—Smooth Jaws
Prod. No. 28501—Serrated Jaws



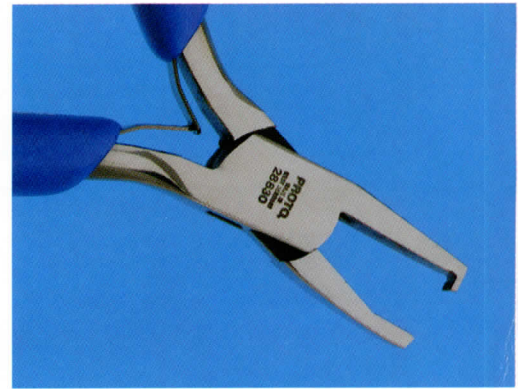
5 1/4" Stress Relief Forming Plier

Provides stress relief in component leads,
b = .433 c = .295 d = .788, 22 AWG copper wire
capacity
Prod. No. 28870



5" Cutting and Bending

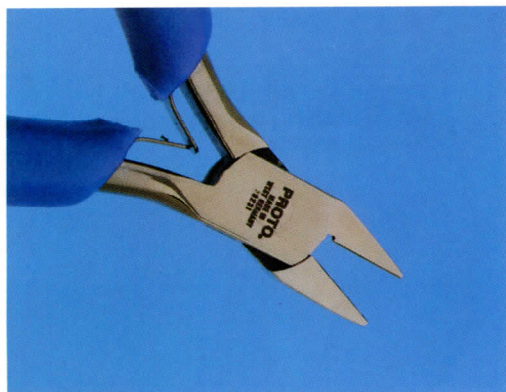
Shears leads at 1.5mm and bends to 45°,
a = .118 b = .433 c = .295 d = .670, 20 AWG
copper wire capacity
Prod. No. 28800



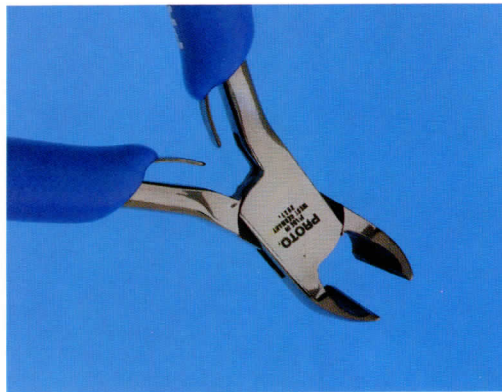
5" Distance Shear Cutter

Cuts leads consistently at .030, a = .138
b = .472 c = .315 d = .619, 20 AWG copper wire
capacity
Prod. No. 28830

Electronic Tools



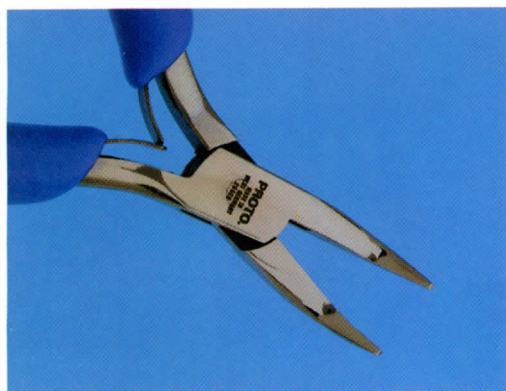
4 3/4" Tapered Head Cutters



4 1/4" 29° Angled Head Cutters

a = .512 b = .433 c = .295 d = .512, 16 AWG copper wire capacity, 26 AWG hard wire capacity
Prod. No. 28230—Flush Cut
Prod. No. 28231—Semi Flush Cut
Prod. No. 28232—Standard Cut

a = .473 b = .394 d = .394, 16 AWG copper wire capacity, 26 AWG hard wire capacity
Prod. No. 28270—Flush Cut
Prod. No. 28271—Semi Flush Cut



4 3/4" Bent Chain Nose Pliers

Proto® Electronic Pliers

are individually forged from the highest grade steel providing superior durability while virtually eliminating breakage when used in a variety of repetitive electronic applications.

The superior box-joint is engineered for exact guidance resulting in a perfectly aligned joint for extended plier life.

Precise induction heat treating processes to the cut-

ting edges maintains sharpness after repeated cuts. Comfortable foam handles reduce hand fatigue and a surgical finish is used for easy cleaning.

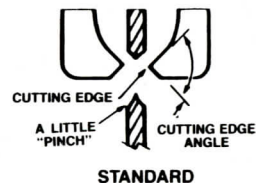
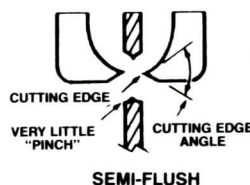
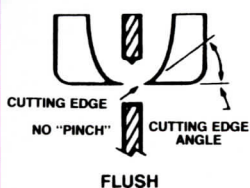
You can see that what has been developed is the finest and highest quality electronic pliers available in the world. You would have expected nothing less from **Proto®** Professional Hand Tools.

b = .354 c = .236 d = .788
Prod. No. 28520—Smooth Jaws
Prod. No. 28521—Serrated Jaws



4 Piece Cutting and Holding Plier Set, Prod. No. 28900

Cutting edge types:



Dimensional details:



- A) Cutting edge length
- B) Jaw width. Measured at joint.
- C) Jaw thickness. Measured at joint.
- D) Jaw length. Measured from tip to beginning of joint.

Four of the most often used tools. Cordura® Zippered Case. Set contains the following:
28121—4 1/4" Tapered Head Cutters, 28212—4 3/4" Oval Head Cutters, 28500—4 3/4" Chain Nose Pliers, 28641—5 3/4" Needle Nose Pliers

Old World Quality Combined With Contemporary Design

Hand Polished Surgical Finish is easy to clean and since it is *not* chrome plated, the finish will *not* peel or flake causing damage to delicate electronic boards.

Serrated and smooth jaws are available with most holding pliers.

Precision induction hardened cutting edges guarantee extra long life.

Two Welded Compression Springs are individually matched and will provide years of repetitive actions with precise control.

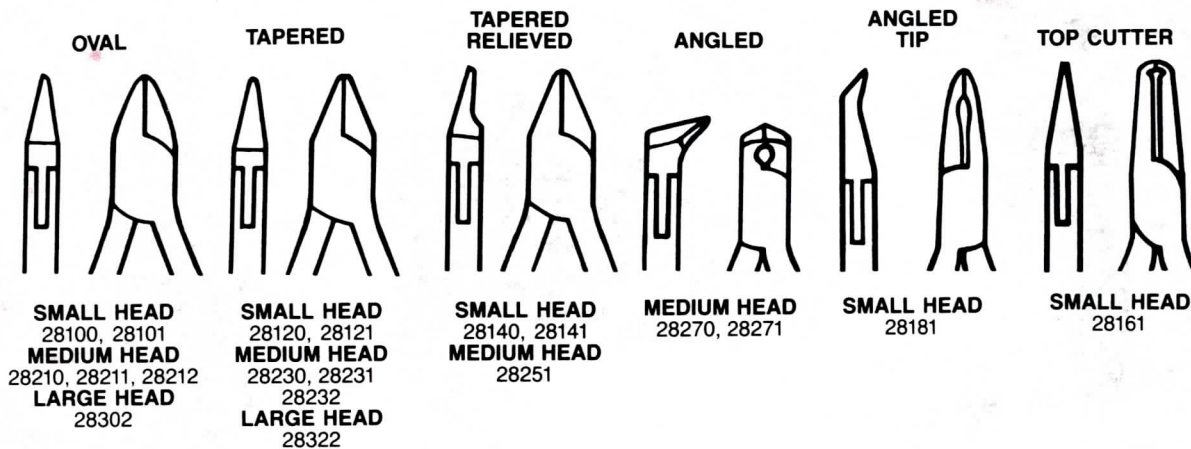
Box Joints are engineered for exact guidance resulting in a perfectly aligned joint for reduced wear and extended plier life.

Comfortable Closed Cell Foam Handles reduce hand fatigue when used over short or long periods of time while providing a "feel" for performing delicate tasks.

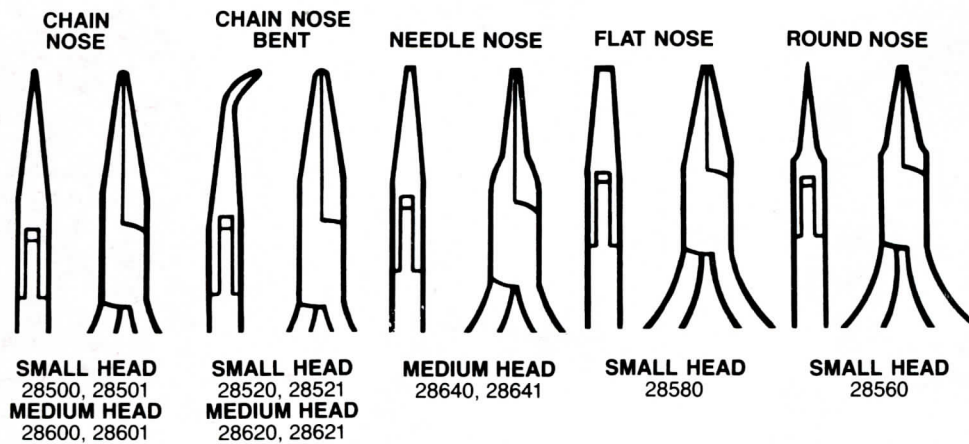
Eight Plier Heads Shapes permit access into a variety of tight clearance areas.

PROTO®
MADE IN
WEST GERMANY
28302

Types of Cutting Heads



Five Holding Jaw Styles



Cautions

1. Foam (cushion) handles are not intended to provide protection against electric shock. **DO NOT USE ON OR NEAR ENERGIZED CIRCUITS.**
2. When cutting wire or metal, hold short end to prevent flying pieces. Work safely with tools by wearing safety goggles.



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